

Remarks

The Section 103 Rejection of Claims 12-22, 24-27, 30, 31, 34, and 35

The Examiner rejected Claims 12-22, 24-27, 30, 31, 34, and 35 under 35 U.S.C. §103(a) as unpatentable over United States Patent No. 5,035,476 (Ellis et al.) in view of United States Patent No. 5,681,987 (Gamble). To the extent the rejection applies to amended Claims 12 and 30, Applicant traverses the rejection and respectfully requests reconsideration.

(A) Amended Claim 12 recites a confocal microscope with a point light source and the use of a first and second optical reference points located in planes conjugated with one another. The Examiner admits that Ellis does not disclose the key element of an adjustable light source, but states that it would be obvious to apply an adjustable light, as taught by Gamble, to Ellis. The Examiner further states that the use of an adjustable light source (in Ellis) would clearly have advantages over a light source which is not adjustable, one such advantage obviously being the ability to align the source with the rest of the optical components. In accordance with the first *prima facie* requirement, the references themselves must suggest a reason to either modify a reference, or the knowledge generally must provide a motivation to modify the reference in such a way as to make the claimed invention obvious.

“Therefore, an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue....To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that would create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art reference for combination in the manner claimed.” *In re Rouffet*, 47 USPQ2d 1453, 1457-1458 (1998).

This rejection is based upon impermissible hindsight. The Examiner has dismembered the structure of the Applicants' invention, based upon hindsight, and then looked for citations

showing the critical components, based upon hindsight, and then recombined the components, based upon hindsight, without any teaching or suggestion in the references to do so.

As discussed previously, Ellis is silent regarding optical reference points, beam paths, and adjusting a light source. At most, Ellis teaches the prior art method of manipulating individual optical components *ad naseum* to align a confocal microscope.

There is no motivation, suggestion, or teaching in Ellis to pursue an alignment means or address the light source, much less reach the conclusion that the light source should be made adjustable as an alignment means. Ellis' invention is not directed toward the problem of aligning a confocal microscope. Ellis states in column 1, lines 49-52: "An object of this invention is to provide a confocal laser scanning transmission microscope which easily can provide an image of a transmitted light and includes a small number of optical components." As discussed previously Ellis only includes a single, tangential reference to alignment in col. 1, lines 30-38: "But in the conventional microscope, a number of optical components are required to form a confocal arrangement. And a drawback of this microscope is that the optical system for guiding a transmitted light again to the deflecting element is complicated, and the microscope is accordingly large-sized. The microscope includes such a number of optical components that it is difficult to adjust their alignment." This reference is in the "Background of the Invention" and suggests no thought concerning movement of a light source for alignment. Ellis is so unappreciative of alignment that he makes no mention at all in the claims or "Description of the Preferred Embodiment" to alignment. Conventional microscopes typically do not utilize point light sources and in the absence of such a point light source, alignment by moving the light source is not possible. That is, movement of a broad light field cannot be used for alignment of components in the field. Thus, Ellis is not solving the problem of aligning a confocal microscope. Rather, he is seeking to reduce the number of parts in a microscope. In fact, making a light source adjustable would exacerbate the problem Ellis is solving, since this would entail increasing the parts count in the microscope.

Gamble does not even disclose a confocal microscope. Therefore, Gamble cannot be solving the problem of aligning a confocal microscope. Instead, Gamble discloses a resonance

contact scanning force microscope. The microscope in Gamble is completely different in structure and function than a confocal microscope, and therefore, is not analogous to a confocal microscope. As shown in Fig. 6 of Gamble, the microscope in Gamble does not include any optics beyond those in the light source. Instead, Gamble discloses a device comprising a light source, a reflecting surface, and a planar mirror. The alignment shown in Gamble is, at most, equivalent to aligning the light source (1), beam splitter (4), and scanning mirror (6) of Figure 1 of the present invention. Even this comparison ignores lens (2) and (5) of the present invention, which have no comparable components in Gamble. Gamble is solving the problem of "aligning" a reflected beam, which is undergoing constant deflection, with the relatively large area of the planar mirror (82). This is completely different than the precise alignment disclosed in the present invention, for example, Gamble does not address the alignment of lens or the large number of components typical of a confocal microscope. Thus, Gamble discloses a device quite dissimilar from a confocal microscope and is addressing a completely different set of problems (e.g., tip-surface interaction) than the present invention. Therefore, there is no suggestion in Gamble to apply an adjustable light source to a confocal microscope.

Since neither Ellis nor Gamble are solving the problem of aligning components in a confocal microscope, neither Ellis nor Gamble can be said to suggest a modification that points to the claimed invention's use of an adjustable point light source in a confocal microscope. It is a cornerstone of obviousness analysis that the prior art reference have the same purpose (solve the same problem) as the claimed invention.

Since the combination of Ellis with Gamble does not suggest a modification that makes the claimed invention obvious, the Examiner is requested to withdraw the rejection.

Claims 13-22, 24-27, and 34 and 35 depend from Claim 12, which, as discussed above, is patentable in light of the cited references. Thus, Claims 13-22, 24-27, and 34 and 35 are also patentable in light of the cited references.

(B) Amended Claim 30 recites a confocal microscope assemblage having a point light source and first and second optical reference planes conjugated with one another. LoBianco similarly does not cure the defects of the other cited references. LoBianco does not disclose a

confocal microscope and is solving a problem unrelated to aligning elements in a confocal microscope. Since the combination of Ellis with Gamble and LoBianco does not suggest a modification that makes the claimed invention obvious, the Examiner is requested to withdraw the rejection. Claim 31 is dependent from Claim 30. Since Claim 30 is patentable over the cited references, Claim 31 is also patentable over the cited references.

The Section 103 Rejection of Claims 1-11, 23, 28, 29, 32, and 33

The Examiner rejected Claims 1-11, 23, 28, 29, 32, and 33 under 35 U.S.C. §103(a) as unpatentable over United States Patent No. 5,035,476 (Ellis et al.) in view of United States Patent No. 5,691,987 (Gamble) and further in view of United States Patent No. 5,214,492 (LoBianco et al.). To the extent the rejection applies to amended Claims 1 and 28, Applicant traverses the rejection and respectfully requests reconsideration.

(A) Amended Claim 1 recites a confocal microscope with a point light source and the use of a first and second optical reference points located in planes conjugated with one another. Similar to Claim 30, the combination of Ellis with Gamble and LoBianco does not suggest a modification that makes the claimed invention obvious. Since the combination of Ellis with Gamble and LoBianco does not suggest a modification that makes the claimed invention obvious, the Examiner is requested to withdraw the rejection of Claim 1.

Claims 2-3, 5-11, and 32 and 33 depend from Claim 1. Since Claim 1 is patentable over the cited references, Claims 2-3, 5-11, and 32 and 33 are also patentable over the cited references.

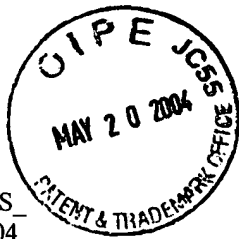
Claim 23 is dependent from Claim 12. Since Claim 12 is patentable over cited references, Claim 23 is also patentable over the cited references.

(B) Amended Claim 28 recites a confocal microscope assemblage having a point light source and first and second optical reference planes conjugated with one another. Similar to Claim 30, the combination of Ellis with Gamble and LoBianco does not suggest a modification that makes the claimed invention obvious. Since the combination of Ellis with Gamble and

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LoBianco does not suggest a modification that makes the claimed invention obvious, the Examiner is requested to withdraw the rejection of Claim 28.

Claims 4 and 29 are dependent from Claim 28. Since Claim 28 is patentable over the cited references, Claims 4 and 29 are also patentable over the cited references.



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Conclusion

For all of the reasons outlined above, Applicant respectfully submits that all pending claims are patentable and in condition for allowance, which action is courteously requested.

Respectfully submitted,

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CPM
May 17, 2004